

ABSTRACT

The present invention is a multiparameter method of screening for the diagnosis, prevention or treatment of atherosclerosis-related coronary heart disease (CHD) or stroke. This method is used for predicting a total risk of the disease and a disease risk level, determining a primary cause in the disease, assessing a therapeutic efficacy and optimizing the therapeutic targets at the different stages of the disease in different individuals who require the therapy to prevent or to treat the disease. The method of this invention can be used to combine the contributions of atherosclerotic risk factors to the disease and to unite the two major methods for diagnosing the disease: screening the Low-density lipoprotein (LDL) level and measuring the C-reactive protein (CRP) concentration in human blood. The method of this invention is written as an executable computer program named the MMA.exe © 2004, by Xing F. Wang, which provides greater ease and convenience to perform this method.

REFEENCES CITED

U.S. PATENT DOCUMENTS

"Not Applicable"

OTHER PUBLICATIONS

- [1] Wang, H.H. & Wang, X.F. In Progress in atherosclerosis research: Analytical methods for atherosclerosis research (ed. by Columbus F.) In press (Nova Science Publishers Inc., New York, 2004).
- [2] Wang, H.H. Analytical models of atherosclerosis. Review. Atherosclerosis 159, 1-7 (2001).
- [3] Grundy, S.C. In Plasma lipoproteins and coronary artery disease: Role of low-density lipoproteins in development of coronary artery atherosclerosis. (eds. by Kreisberg, R.A. & Segrest, J.P.) 93-124 (Blackwell Scientific, Cambridge, 1992).
- [4] National Cholesterol Education Program. Second report of the expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult treatment panel II). Circulation 106 (25), 1333-1445 (2002).
- [5] Shepherd, J., Betteridge, D.J. & Durrington, P. Strategies for reducing coronary heart disease and desirable limits for blood lipid concentrations:

guidelines from the British Hyperlipidaemia Association. Br. Med. J. 295, 1245-1246 (1987).

- [6] Study group of the European Atherosclerosis Society. The recognition and management of hyperlipidaemia in adults. A policy statement of European Atherosclerosis Society. Eur. Heart. J. 9, 571-600 (1988).
- [7] Canadian lipoprotein conference at hoc committee on guidelines for dyslipoproteinemias. Guidelines for the detection of high risk lipoprotein profiles and the treatment of dyslipoproteinemias. Can. Med. Assoc. J. 142, 1371-1382 (1990).
- [8] National Center for Health Statistics. National health and nutritional examination, survey (III), (1994).
- [9] Libby, P. Inflammation in atherosclerosis. Review. Nature 420, 868-874 (2002).
- [10] Li, A.C. & Glass, C.K. The macrophage foam cell as a target for therapeutic intervention. Review. Nature Medicine 8, 1235-1242 (2002).
- [11] Ross, R. & Glomset, J. Atherosclerosis and arterial smooth muscle cell. Science 180, 1332-1339 (1973).
- [12] Caro, C.G., Fitzgerald, J.M. & Schroter, R.C. Arterial wall shear and distribution of early atheroma in man. Nature 223, 1159-1161 (1969).
- [13] Texon, M. Hemodynamic basis of atherosclerosis. (Hemisphere Publishing Corporation, Washington, 1980).
- [14] Friedman, M.H., Deters, O.J., Mark, F.F., Barger, C.B. & Hutchins, G.M. Arterial geometry affects

- hemodynamics: a potential risk factor for atherosclerosis. *Atherosclerosis* 46, 225-231 (1983).
- [15] Beere, P.A., Glagov, S. & Zarins, C.K. Retarding effect of lowered heart rate on coronary atherosclerosis. *Science* 226, 180-182 (1984).
- [16] Kannel, W.B., Kannel, C. & Paffenbarger, R.S.J. Heart rate and cardiovascular mortality: The Framingham study. *Am. Heart. J.* 113, 1489-1494 (1987).
- [17] Schwartz, C.J., Valente, A.J., Sprague, E.A., Kelley, J.L. & Nerem, R.M. The pathogenesis of atherosclerosis: an overview. *Clin. Cardiol.* 14, 1-16 (1991).
- [18] Kruth H.S. Lipoprotein cholesterol and atherosclerosis. Review. *Current Molecular Medicine* 1, 633-653 (2001).
- [19] Lusis, A. Atherosclerosis. Review. *Nature* 407, 233-241 (2000).
- [20] Could, A.L., et al. Cholesterol reduction yields clinical benefit: Impact of statin trials. *Circulation* 97 (10), 946-952 (1998).
- [21] DeBakey, M.E., Lawrie, G.M. & Glaeser, D.H. Patterns of atherosclerosis and their surgical significance. *Ann. Surge.* 201, 115-131 (1985).
- [22] Bergeron, C.B., Hutchins, G.M. & Moore, G.W. Distribution of the geometric parameters of human aortic bifurcations. *Atherosclerosis* 6, 109-113 (1986).